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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,203	07/29/2003	Thomas Thisted	10062.210-US	1994
25908	7590	10/29/2009		
NOVOZYMES NORTH AMERICA, INC.			EXAMINER	
500 FIFTH AVENUE			PROUTY, REBECCA E	
SUITE 1600				
NEW YORK, NY 10110			ART UNIT	PAPER NUMBER
			1652	
			NOTIFICATION DATE	DELIVERY MODE
			10/29/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patents-US-NY@novozymes.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/630,203	THISTED ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Rebecca E. Prouty	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 24 September 2009.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 58-86 is/are pending in the application.
- 4a) Of the above claim(s) 65,67 and 68 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 59-64,66 and 69-86 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 29 July 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>10/09</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/24/09 has been entered.

Claims 1-58 have been canceled. Newly presented claims 58-86 are at issue and are present for examination.

Claims 65, 67, and 68 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 8/5/08.

Figure 1 is objected to because the drawing is supposed to show an alignment of several amino acid sequences yet because a constant width font was not used, corresponding sequences are not in fact aligned with each other. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

In view of the papers filed 9/24/09, the inventorship in this nonprovisional application has been changed by the deletion of Thomas Thisted, Soren Kjaerulff and Claus Crone Fuglsang.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of Office records to reflect the inventorship as corrected.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 59-64, 66, and 69-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borchert et al. (WO 99/23211).

Borchert et al. teach making variants of any Termamyl-like alpha amylase in the position of the Termamyl-like alpha amylase corresponding to position 172 of the SP722  $\alpha$ -amylase. Borchert et al. further teach detergent compositions comprising said Termamyl-like alpha amylase variants. Position 172 of the SP722 amylase corresponds to position 170 of *Bacillus licheniformis*  $\alpha$ -amylase (SEQ ID NO:8 of the instant application) Borchert et al. teach variants in which the natural amino acid in this position is replaced with a different amino acid. Borchert et al. also

teach modification of other amino acid positions. Borchert et al. further teach that a preferred parent alpha amylase is that of *Bacillus licheniformis* (BLA, see page 13), i.e., the alpha amylase of SEQ ID NO:8 herein and that other Termamyl-like alpha amylases include those of *Bacillus amyloliquefaciens* (BAN) i.e., the alpha amylase of SEQ ID NO:10 herein, and *Bacillus stearothermophilus* (BSG) i.e., the alpha amylase of SEQ ID NO:6 herein (see pages 7-8) thus a variant of BLA modified only at position 170 and another position would have greater than 99% identity to SEQ ID NO:8, a variant of BAN modified only at the position corresponding to 170 of BLA (or 172 of SP722) and another position would have greater than 99% identity to SEQ ID NO:10, and a variant of BSG modified only at the position corresponding to 170 of BLA (or 172 of SP722) and another position would have greater than 99% identity to SEQ ID NO:6. Borchert et al. do not explicitly teach replacement of amino acid position 170 of BLA or the corresponding position of BAN or BSG with Q. However, a skilled artisan would have found it obvious given the teaching of Borchert et al. to modify this position to replace the naturally occurring amino acid with all other 19 naturally occurring amino acids. Furthermore, as inspection of the alignment of Termamyl-like  $\alpha$ -amylases of Figure 1 of Borchert et al. shows that in some naturally occurring

Termamyl-like  $\alpha$ -amylases, this position is occupied with a glutamine residue, it would have been obvious to one of ordinary skill in the art to select glutamine as the amino acid to replace position 170 with as a skilled artisan would reasonably expect that the three-dimensional structure of Termamyl-like  $\alpha$ -amylases would accommodate a glutamine at this position. Furthermore, although Borchert et al. do not explicitly teach detergent compositions including a surfactant or a glucoamylase, phytase and/or a pullulanase, these are well known components of detergent compositions and thus would have been obvious to include.

Applicants argue that Borchert et al. disclose alpha-amylase variants comprising a substitution at position 170 (SEQ ID NO: 8 numbering) with A, D, R, N, C, E, G, H, I, L, K, M, F, P, S, T, W, Y or V (see page 4, line 21). However, Borchert et al. do not teach or suggest alpha-amylase variants comprising a substitution at position 170 with Q, as claimed herein. However, this is merely an artifact of the fact that within the SP722  $\alpha$ -amylase (the  $\alpha$ -amylase used as the reference amylase in Borchert et al.) position 172 is naturally a Q. Thus Borchert et al. clearly suggest every natural amino acid at this position. For other Termamyl-like  $\alpha$ -amylases which do not have Q

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as the wild type amino acid at this position (i.e.,  $\alpha$ -amylases including BLA, BAN and BSG), the disclosure of Borchert et al. would suggest replacements with Q as well despite the fact that it is not included in the explicit list as the list includes all natural amino acids except the amino acid found in the position naturally.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca E. Prouty whose telephone number is 571-272-0937. The examiner can normally be reached on Tuesday-Friday from 8 AM to 5 PM. The examiner can also be reached on alternate Mondays

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang, can be reached at (571) 272-0811. The fax phone number for this Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Rebecca Prouty/  
Primary Examiner  
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